Python MySQL GUI

A simple app that can be further developed into a comprehensive project

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Introduction

▶ As we have discussed in my previous presentation about the process of creating a simple GUI app in python using the wxPython module and wxFormBuilder.

▶ We are now going to extend that knowledge to develop a Python GUI application that connects to MySQL database and performs operations like Insert, Update, Delete and navigation across a database table.

▶ We need to install wxPython and wxFormBuilder for this project.

▶ Moreover we also need to install mysql-connector using pip command as – pip install mysql-connector in the command window.

The GUI layout, control names and event names
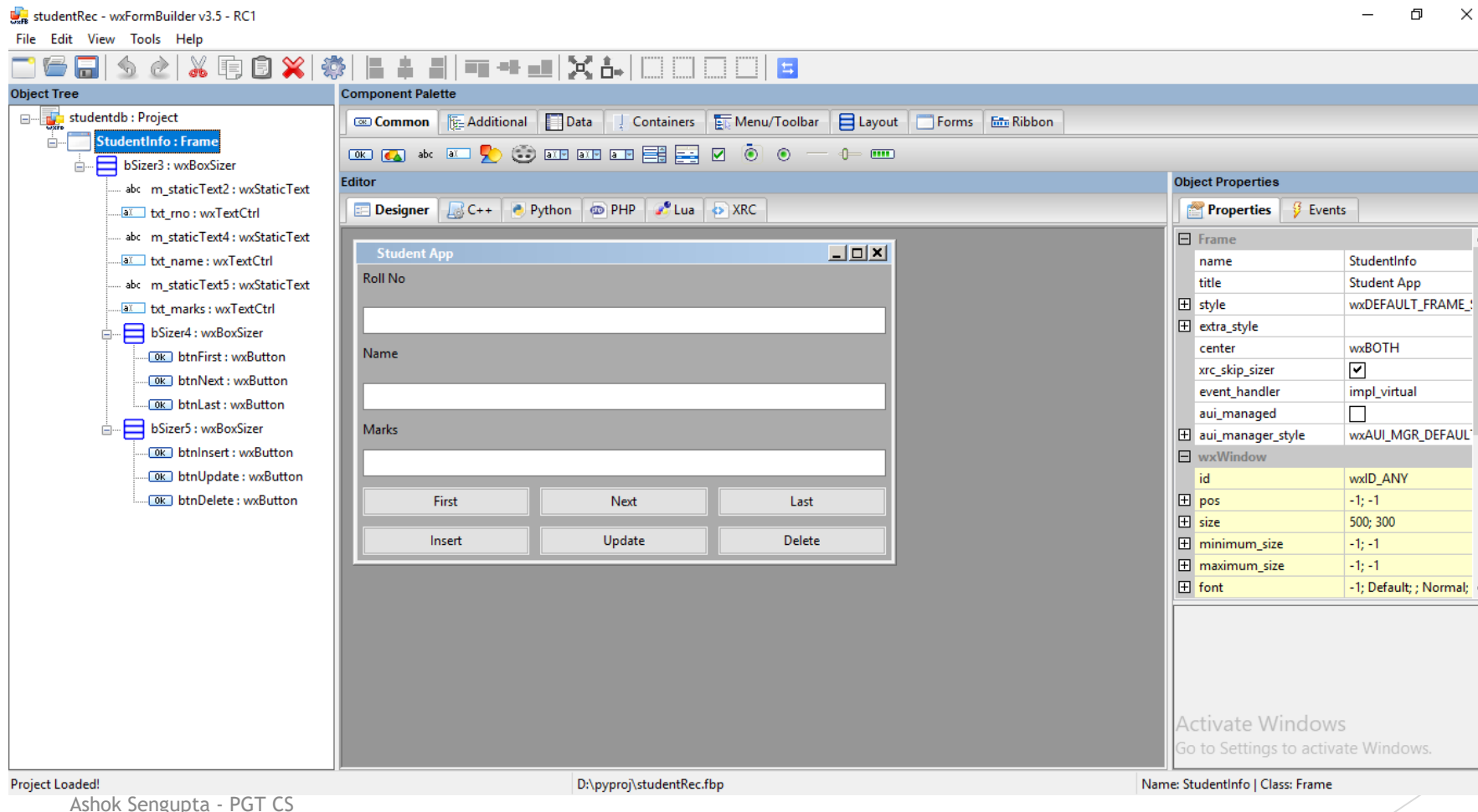
Text Fields:
- txt_rno
- txt_name
- txt_marks

Button events:
- moveFirst
- moveNext
- moveLast
- insertRec
- updateRec
- deleteRec

Press F8 to generate the Python Guard Code as noname.py. Rename the file to studentwx.py

Create a blank python file and name it studentrec.py

The various modules to work with

- Create another blank python file in same folder and name it as **database.py**

- We shall write all database related python codes in this file and import the database module in the studentRec.py

- The studentRec.py will inherit from studentwx.py and the events will be overridden.

database.py

```python
import mysql.connector

class studentapp:
    __con = None
    __mycursor = None

    def connectdb(self):
        self.con = mysql.connector.connect(host="localhost", user="root", passwd="", database="student")
        self.mycursor = self.con.cursor()

    def getcursor(self):
        return self.mycursor

    def resultset(self):
        sql = "SELECT * FROM score"
        self.mycursor.execute(sql)
        result = self.mycursor.fetchall()
        return result
```

database.py contd....

```python
    def closecon(self):
        self.con.close()

    def insertdb(self,rno,nm,ma):
        sql = "INSERT INTO score(rollno, name, marks) VALUES(%s, %s, %s)"
        row = [(rno, nm, ma)]
        self.mycursor.executemany(sql,row)
        self.con.commit()

    def deletedb(self, rno):
        sql = "DELETE FROM score WHERE rollno='%d'" % (rno)
        self.mycursor.execute(sql)
        self.con.commit()

    def updatedb(self, rno, nm, ma):
        sql = "UPDATE score SET name='%s', marks='%s' WHERE rollno='%d'" % (nm, ma, rno)
        self.mycursor.execute(sql)
        self.con.commit()
```

studentRec.py

```python
import wx
import studentwx  #Importing the python module having GUI code
import database   #importing module having database routines

class myFrame(studentwx.StudentInfo):   # myFrame class inheriting GUI class
    __db = None   # Object for database class
    __result = None # Object to store the resultset array
    __count = 0

    def __init__(self,parent):   # constructor for base class
        studentwx.StudentInfo.__init__(self,parent) # exclusive call to base class constructor
        self.db = database.studentapp() #instantiating object of studentapp class
        self.db.connectdb() # connecting to database
        self.result = self.db.resultset()  # Fetching the recordset
        self.showdata() # Display the first record
        self.count=0
```

studentRec.py contd....

```python
def showdata(self,i=0):
    rollno = self.result[i][0]
    name = self.result[i][1]
    marks = self.result[i][2]
    self.txt_rno.SetValue(str(rollno))
    self.txt_name.SetValue(name)
    self.txt_marks.SetValue(str(marks))

def moveFirst(self, event):
    self.showdata()

def moveLast(self, event):
    self.showdata(i=len(self.result)-1)

def moveNext(self, event):
    if self.count == len(self.result):
        self.count = 0
        self.showdata()
    else:
        self.showdata(i=self.count)
        self.count=self.count+1
```

```python
def insertRec(self, event):
    r = int(self.txt_rno.GetValue())
    n = self.txt_name.GetValue()
    m = int(self.txt_marks.GetValue())
    self.db.insertdb(r,n,m)
    self.db.closecon()
    self.db.connectdb()
    self.result = self.db.resultset()
    self.showdata()

def deleteRec(self, event):
    r = int(self.txt_rno.GetValue())
    self.db.deletedb(r)
    self.db.closecon()
    self.db.connectdb()
    self.result = self.db.resultset()
    self.showdata()
```
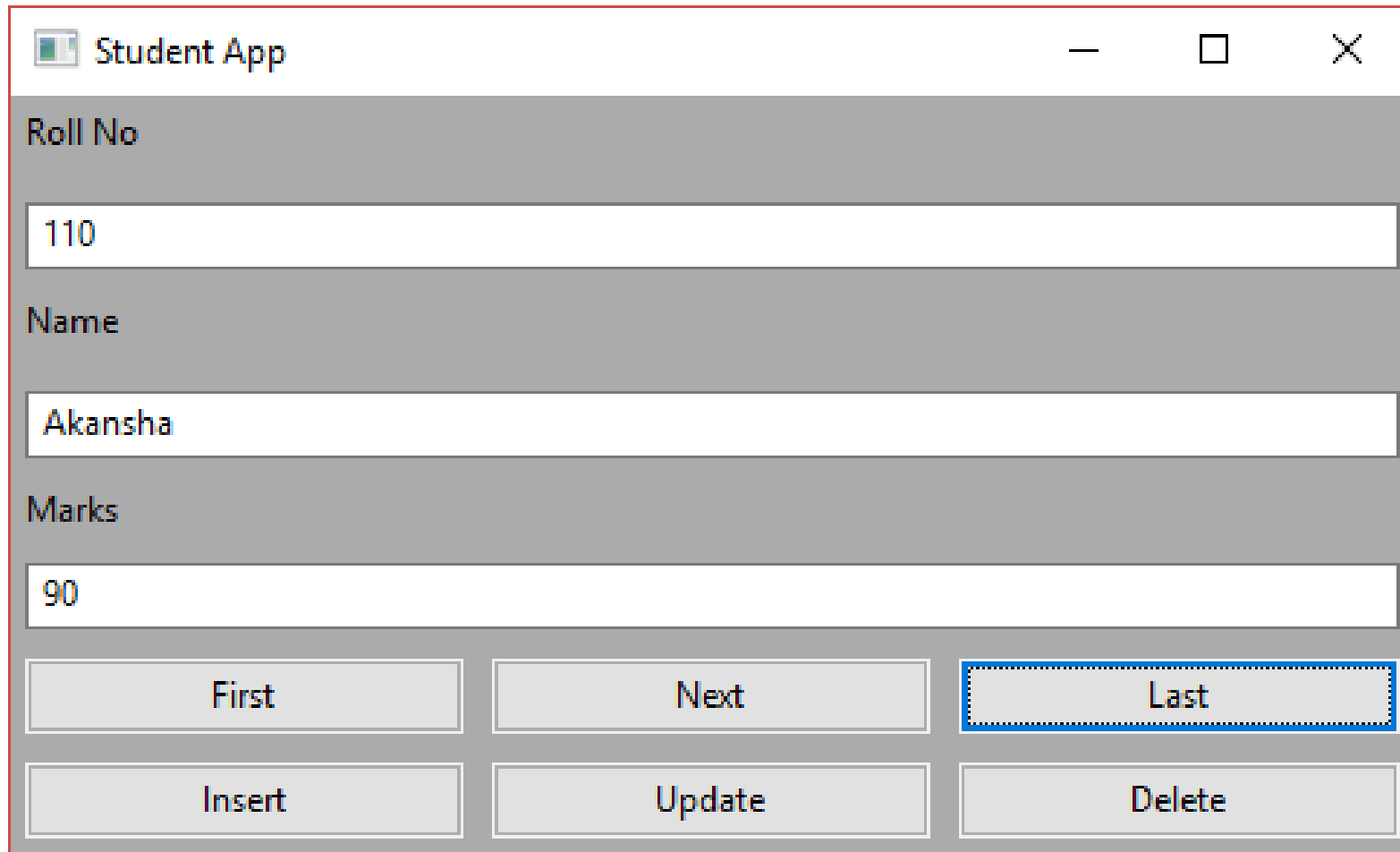
studentRec.py contd....

```python
def updateRec(self, event):
    r = int(self.txt_rno.GetValue())
    n = self.txt_name.GetValue()
    m = int(self.txt_marks.GetValue())
    self.db.updatedb(r,n,m)
    self.db.closecon()
    self.db.connectdb()
    self.result = self.db.resultset()
    self.showdata()


app = wx.App(False)
frame = myFrame(None)
frame.Show(True)
app.MainLoop()
```

The final product

References

- https://www.w3schools.com/python/python_mysql_create_db.asp

- https://wxpython.org/

- https://www.tutorialspoint.com/wxpython/wxpython_gui_builder_tools.htm

- https://realpython.com/python3-object-oriented-programming/

- https://www.programiz.com/python-programming/object-oriented-programming

Thank you